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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,065	07/30/2003	Donald VanderSluis	VTE-141-B	8198

7590 12/27/2005  
Andrew R. Basile  
Young & Basile, P.C.  
Suite 624  
3001 West Big Beaver Road  
Troy, MI 48084

EXAMINER
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AGUIRRECHEA, JAYDI A

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/630,065

**Applicant(s)**

VANDERSLUIS, DONALD

**Examiner**

Jaydi A. Aguirrechea

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-25 and 27-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-22, 35-42 and 44 is/are rejected.
- 7) ☐ Claim(s) 1-3, 5-14, 23-25, 27-34 and 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Objection to claim 44 is hereby withdrawn.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-22, 35-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann et al. (US 6236190) in view of Ward et al. (US 4558391)

Hoffmann discloses a device and method for driving a capacitive actuator; the device comprising a piezoelectric (smart material) actuator (P); a power source (V) connected to the actuator and a switch circuit. (See figures 1-2 and its description)

However, Hoffman fails to disclose the switch circuit for discharging the actuator in response to the removal of the connection to the power source.

Ward discloses a capacitive discharge drive comprising a switch (129) for actively discharging a capacitor (actuator) in response to removal of the connection to the power source.

Ward's invention has the purpose of automatically discharge any remaining energy in the capacitor (actuator) at any time upon removal of the primary power source.

Therefore, it would have been obvious at the time of the invention was made to use the switch circuit disclosed by Ward in the invention disclosed by Hoffmann for the purpose of automatically discharging the energy stored in the capacitor.

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With regards to claim 16, Hoffmann discloses a switch circuit for charging the actuator (Figures 1 and 2).

With regards to claims 17 and 18, Hoffmann discloses a switch circuit for charging and discharging the actuator in response to the control signal. See columns 4 and 5.

With regards to claims 19 and 21, Hoffmann discloses a voltage comparator (K).

With regards to claim 20 and 22, Hoffmann discloses the different stages of the charging and discharging process of the piezoelectric actuator in the description of the preferred embodiment (Cols. 4 and 5).

With regards to claims 35-42 and 44, the combination of Hoffman and Ward disclose the claimed limitations as disclosed above. The method of driving the actuator is inherent in the device itself, and therefore rejected under the same grounds as explained above.

#### ***Allowable Subject Matter***

4. Claims 1-3, 5-14, 23-25, 27-34 and 43 are allowed.

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 15 and 35 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO 892.

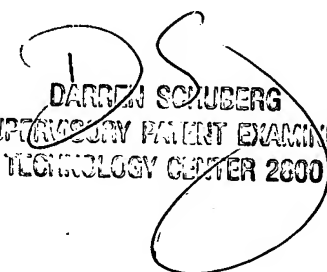
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JAA  
12/19/2005

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000